Case 17497

Eurorad

Caecal diverticulitis

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Section: Abdominal imaging
Area of Interest: Abdomen Colon
Procedure: Abdomen
Procedure: Colon
Imaging Technique: CT
Special Focus: Abdomen Colon Case Type: Clinical Cases
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Patient: 47 years, male

Clinical History:

A 47-year-old Caucasian male presented with progressive increasing abdominal pain since one day. The pain was predominantly located in the right iliac fossa. Abdominal wall muscle resistance and rebound tenderness was noted in the right lower quadrant. There was no fever. Blood analysis revealed leucocytosis and elevated CRP.

Imaging Findings:

Contrast-enhanced computed tomography (CT) of the abdomen demonstrates a slight hyperdense wall thickening of the caecum and adjacent ascending colon (Figure 1). Diffuse stranding of the adjacent mesenteric fat is noted. Hyperdense colonic diverticula are present in the abnormal bowel segment, a finding highly suggestive for active participation of the diverticula in the inflammatory process (Figure 2). Furthermore, the appendix shows no signs of inflammation and appears completely normal (Figure 3). Encapsulated fluid collections nearby the caecum or intra-abdominal free air is not present. Based on these findings, diagnosis of uncomplicated acute caecal diverticulitis is made.

Discussion:

A diverticulum is a small saclike mucosal pouch from the colonic wall. Clogging with faecal material or microperforation may induce inflammation of a diverticulum, resulting in diverticulitis [1]. Diverticular disease is frequently seen in the distal colon as most diverticula develop in the sigmoid colon. The right colon is less frequently affected, especially in the Caucasian population. Diverticula in the right colon tend to present around the anterior wall of the caecum, close to the ileocaecal valve [1–3].

Caecal diverticulitis most often presents with pain in the right lower quadrant which may be present since several days, and raised inflammatory blood markers. Fever, nausea and vomiting may be present. Clinical examination may reveal abdominal tenderness with rebound in the right lower quadrant [2,3]. A wide spectrum of diagnoses overlap with clinical findings, making a correct diagnosis solely based on clinical findings difficult. Ultrasound may be helpful to show inflammation of the caecal wall and may be useful for differential diagnosis with other pathologies.

However, mild focal inflammation may be overlooked. Therefore, CT examination is the imaging modality of choice [1,2].

On contrast-enhanced CT characteristic findings of diverticulitis consist of a hyperdense, inflammatory thickening of the bowel wall with fat stranding and hyperdense diverticula in the abnormal bowel segment. These findings correlate with hypervascularisation and oedema. Inflammation appears to be centered around hyperdense diverticula, a key finding of diverticulitis. Symptoms of caecal diverticulitis will manifest in the right iliac fossa, contrary to a classical diverticulitis in the sigmoid colon which is located in the left iliac fossa. If left untreated, mild inflammation may progress to wall necrosis due to impaired vascularisation of the bowel wall, perforation, abscess or fistula formation. Further complications include abdominal free air and fluid collections surrounded by inflamed tissue. The final diagnosis is based on a combination of clinical findings, blood analysis and CT imaging [1]. Conservative treatment, abscess drainage, diverticulectomy and hemicolectomy are the most common treatment options [2,3]. When uncomplicated, conservative therapy with antibiotics should be the first choice. Surgical approach may be required in complicated cases. The overall prognosis is good [3].
In conclusion, caecal diverticulitis is an uncommon finding in patients with right fossa pain. Prompt diagnosis and treatment will prevent complications and ensure complete healing.

Written informed patient consent for publication has been obtained.

Differential Diagnosis List: Caecal diverticulitis, Appendicitis , Gastro-enteritis , Malignancy , Urinary tract pathology (lithiasis, pyelonephritis, …) , Epiploic appendagitis

Final Diagnosis: Caecal diverticulitis

References:

Sugi MD, Sun DC, Menias CO, Prabhu V, Choi HH (2020) Acute diverticulitis: Key features for guiding clinical management. Eur J Radiol 128:109026 (PMID: 32422553)
Chiu TC, Chou YH, Tiu CM, Chiou HJ, Wang HK, Lai YC, et al (2017) Right-Sided Colonic Diverticulitis: Clinical Features, Sonographic Appearances, and Management. J Med Ultrasound 25:33–39 (PMID: 30065452)
Kaya C, Celayir MF, Bozkurt E, Omeroglu S, Guven O, Mihmanli M (2020) Solitary caecal diverticulitis: Comparison of operative and non operative treatment. J Pak Med Assoc. 70:1926-1929 (PMID: 33341831)

Figure 1

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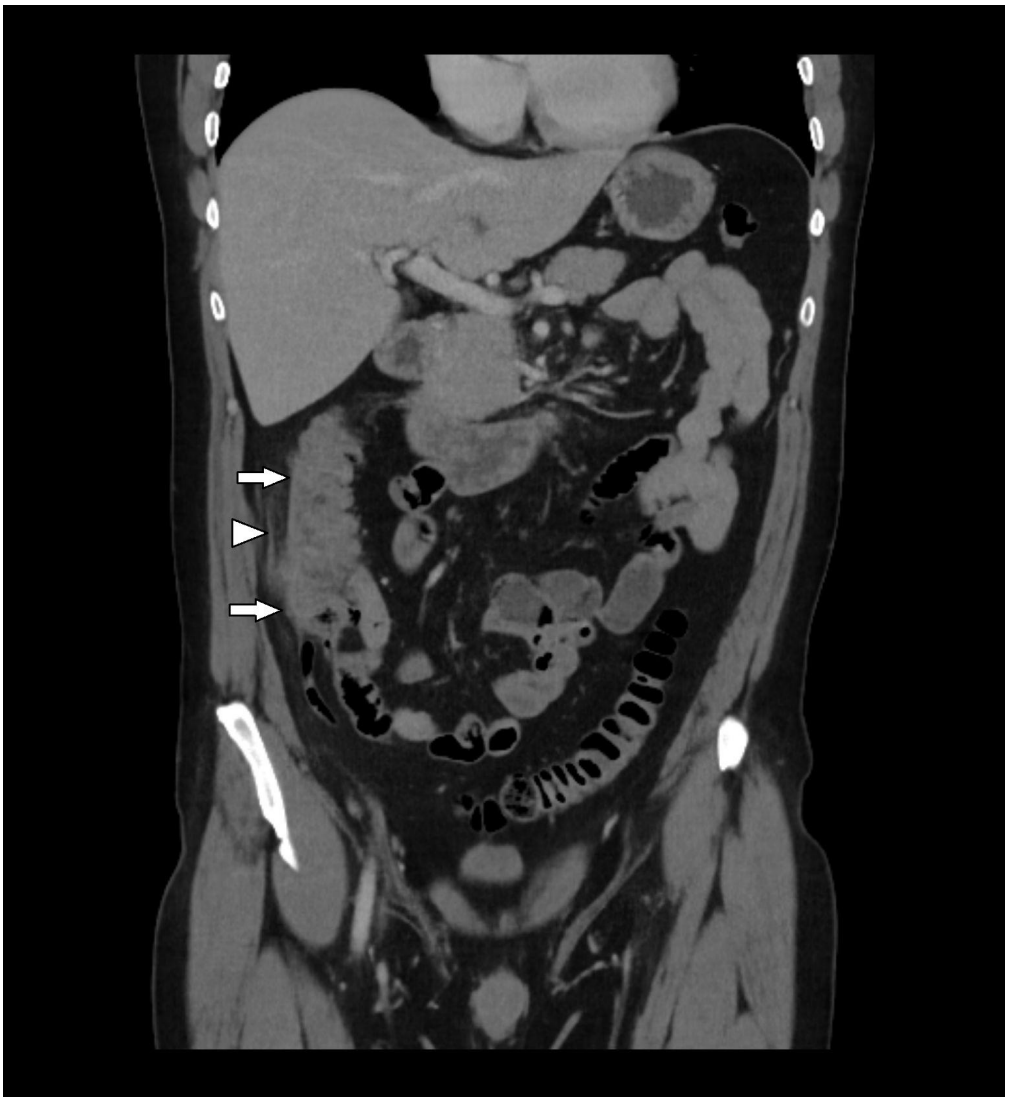

Description: Oedematous wall thickening with slight hyperattenuation of the caecum and proximal ascending colon is shown (arrows). Pericaecal fat stranding is seen (arrowhead)**Origin:** Department of Radiology, AZ Sint-Lucas Ghent, Belgium, 2021

Figure 2

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Description: Mesenteric fat stranding around the caecum is demonstrated (arrows). A hyperattenuating caecal diverticulum is present in the affected posterolateral caecal wall (arrowhead)

Origin: Department of Radiology, AZ Sint-Lucas Ghent, Belgium, 2021

Figure 3

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Description: Pericaecal fat stranding (lower arrow) accompanied with hyperattenuating diverticula (upper arrow). The appendix is not inflamed (arrowhead) **Origin:** Department of Radiology, AZ Sint-Lucas Ghent, Belgium, 2021